TANT COMMISSIONER FOR F hington, DC 20231



<u>....</u> ν

smitted herewith for filing is the patent application of

Inventor(s):

Tim Olson, Ulf Osterberg, Dennis Healy, and Seung Choi

For:

ELECTROMAGNETIC MATCHED FILTER BASED MULTIPLE ACCESS COMMUNICATIONS SYSTEMS

| Also | enc | losed | are |
|------|-----|-------|-----|
| Also | enc | losed | are |

7 Sheets of drawings

Recordation Form Cover Sheet - Patents Only and an Assignment of the invention to

X

Postcard and Express Mail Certification

The filing fee has been calculated as shown below:

| Aller der der der der der der der der der d    | NO. OF<br>CLAIMS<br>FILED |   | NO. OF<br>CLAIMS<br>FROM<br>BASIC FEE | NO. OF<br>EXTRA<br>CLAIMS |  |  |  |
|------------------------------------------------|---------------------------|---|---------------------------------------|---------------------------|--|--|--|
| TOTAL                                          | 37                        | - | 20 =                                  | 17                        |  |  |  |
| NDEP.                                          | 3                         | - | 3 =                                   | 0                         |  |  |  |
| First presentation of multiple dependent claim |                           |   |                                       |                           |  |  |  |

| SMALL ENTITY |                        |  |  |  |  |  |
|--------------|------------------------|--|--|--|--|--|
| RATE         | BASIC<br>FEE<br>\$355. |  |  |  |  |  |
| x 9=         | \$                     |  |  |  |  |  |
| x40=         | \$                     |  |  |  |  |  |
| +135=        | \$                     |  |  |  |  |  |

TOTAL FEE \$

OTHER THAN SMALL ENTITY

OR

<u>OR</u>

|   | RATE  | BASIC<br>FEE<br>\$710. |
|---|-------|------------------------|
| İ | x18=  | \$306                  |
|   | x80=  | \$ .                   |
|   | +270= | \$                     |

\$1016.00

Checks in the amount of \$621.00, \$40.00 and \$355.00 are is enclosed to cover the official filing fee for a large entity.

A check in the amount of \$\_\_\_\_\_ is enclosed to cover the official filing fee for a small entity.

A check in the amount of \$\\$ is enclosed to cover the recordal fee.

Please charge my Deposit Account No. 13-3405 in the amount of \$\_\_\_\_\_. A duplicate copy of this sheet is enclosed.

In regard to this communication, the Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR §1.16 and any additional patent application processing fees under 37 CFR §1.17 or credit any overpayment to Deposit Account No. 13-3405. A duplicate copy of this sheet is enclosed.

Х

During the pendency of this application, the Commissioner is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR §1.16 and any patent application processing fees under 37 CFR §1.17 or credit any overpayment to Deposit Account No. 13-3405. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

PAT:dis (215) 563-1810

Paul A. Taufer, Reg. No. 35,703 Schnader Harrison Segal & Lewis LLP 1600 Market Street, 36th Floor Philadelphia, PA 19103 Attorney for Applicants







## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit

Examiner

36th Floor

1600 Market Street Philadelphia, PA 19103

Serial No. Filed

: Herewith : Tim Olson

Docket: 1575-00

Inventors

Ulf Osterberg : Dennis Healy

Seung Choi

Title

: ELEČTROMAGNETIC MATCHED : FILTER BASED MULTIPLE ACCESS

: COMMUNICATIONS SYSTEMS

Dated: December 29, 2000

**Box Patent Application** 

Assistant Commissioner for Patents

Washington, DC 20231

## **EXPRESS MAIL CERTIFICATION**

37 C.F.R. §1.10

Express Mail Label No.: EL618696543US

Date of Deposit: December 29, 2000

Description of Contents:

Postcard, \$621.00 Check, \$40.00 Check, \$355.00 Check, Application Transmittal Letter, in duplicate, Specification

including Claims and Abstract, and 7 Sheets of Drawings.

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to Box Patent Application, Assistant Commissioner for Patents, Washington, DC 20231.

Darleen J. Scholl

(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

Express Mail Label: EL618696543US



## ASSISTANT COMMISSIONER FOR PATENTS

Washington, DC 20231

| _ | ٠ |   |   |
|---|---|---|---|
| • | 1 | * | ٠ |
|   |   |   |   |

| Transmitted here                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | with for filing is the                                                            | he pate | ent application of                    |                           |         |        |                        |           |      |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|---------------------------------------|---------------------------|---------|--------|------------------------|-----------|------|------------------------|
| Inventor(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Tim Olson, Ulf Osterberg, Dennis Healy, and Seung Choi                            |         |                                       |                           |         |        |                        |           |      |                        |
| For:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ELECTROMAGNETIC MATCHED FILTER BASED MULTIPLE ACCESS COMMUNICATIONS SYSTEMS       |         |                                       |                           |         |        |                        |           |      |                        |
| Also enclosed are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |         |                                       |                           |         |        |                        |           |      |                        |
| <u>x</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 7 Sheets of drawings                                                              |         |                                       |                           |         |        |                        |           |      |                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Recordation Form Cover Sheet - Patents Only and an Assignment of the invention to |         |                                       |                           |         |        |                        |           |      |                        |
| _X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Postcard and Express Mail Certification                                           |         |                                       |                           |         |        |                        |           |      |                        |
| The filing fee has been calculated as shown below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |         |                                       |                           | SMALL F | ENTITY |                        | THER THAI |      |                        |
| The state of the s | NO. OF<br>CLAIMS<br>FILED                                                         |         | NO. OF<br>CLAIMS<br>FROM<br>BASIC FEE | NO. OF<br>EXTRA<br>CLAIMS |         | RATE   | BASIC<br>FEE<br>\$355. | OR        | RATE | BASIC<br>FEE<br>\$710. |
| TOTAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 37                                                                                | -       | 20 =                                  | 17                        |         | x 9=   | \$                     |           | x18= | \$306                  |
| . INDEP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3                                                                                 | -       | 3 =                                   | 0                         |         | x40=   | \$                     |           | x80= | \$                     |
| First presentation of multiple dependent claim                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                   |         |                                       |                           | +135=   | \$     |                        | +270=     | \$   |                        |

e No.: 1575-00

Checks in the amount of \$621.00, \$40.00 and \$355.00 are is enclosed to cover the official filing fee for a large entity.

TOTAL FEE \$\_\_\_\_OR

\$1016.00

A check in the amount of \$\_\_\_\_\_ is enclosed to cover the official filing fee for a small entity.

A check in the amount of \$\_\_\_\_ is enclosed to cover the recordal fee.

Please charge my Deposit Account No. 13-3405 in the amount of \$\_\_\_\_\_\_. A duplicate copy of this sheet is enclosed.

In regard to this communication, the Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR §1.16 and any additional patent application processing fees under 37 CFR §1.17 or credit any overpayment to Deposit Account No. 13-3405. A duplicate copy of this sheet is enclosed.

During the pendency of this application, the Commissioner is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR §1.16 and any patent application processing fees under 37 CFR §1.17 or credit

any overpayment to Deposit Account No. 13-3405. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

PAT:djs (215) 563-1810

<u>X</u>

\_X\_

Paul A. Taufer, Reg. No. 35,703 Schnader Harrison Segal & Lewis LLP 1600 Market Street, 36th Floor Philadelphia, PA 19103 Attorney for Applicants